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90th Congress, 1st Session

House Report No. 830

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EVALUATION OF ALLEGATIONS
OF PAINTING DEFICIENCIES INVOLVING
FEDERAL FACILITIES IN THE
WASHINGTON AREA

TWELFTH REPORT

BY THE

COMMITTEE ON GOVERNMENT
OPERATIONS



OCTOBER 26, 1967.—Committed to the Committee of the Whole House
on the State of the Union and ordered to be printed

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LETTER OF TRANSMITTAL

HOUSE OF REPRESENTATIVES,
Washington, D.C., October 26, 1967.

HON. JOHN W. McCORMACK,
Speaker of the House of Representatives,
Washington, D.C.

DEAR MR. SPEAKER: By direction of the Committee on Government Operations, I submit herewith the committee's twelfth report to the 90th Congress. The committee's report is based on a study made by its Government Activities Subcommittee.

WILLIAM L. DAWSON, *Chairman.*

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Union Calendar No. 318

90TH CONGRESS <i>1st Session</i>	}	HOUSE OF REPRESENTATIVES	}	REPORT No. 830
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EVALUATION OF ALLEGATIONS OF PAINTING DEFICIENCIES INVOLVING FEDERAL FACILITIES IN THE WASHINGTON AREA

OCTOBER 26, 1967.—Committed to the Committee of the Whole House on the State of the Union and ordered to be printed

Mr. DAWSON, from the Committee on Government Operations,
submitted the following

TWELFTH REPORT

BASED ON A STUDY BY THE GOVERNMENT ACTIVITIES
SUBCOMMITTEE

On October 25, 1967, the Committee on Government Operations approved and adopted a report entitled "Evaluation of Allegations of Painting Deficiencies Involving Federal Facilities in the Washington Area." The chairman was directed to transmit a copy to the Speaker of the House.

I. INTRODUCTION

Beginning in August 1966, the Washington Post ran a series of articles based on the allegations of two Washington painters that paint work on Federal facilities in this area was not being performed in accordance with Government contract specifications.

The committee has made a detailed review of each of the more important allegations that had been made concerning painting deficiencies in the Washington area. These allegations, for the most part, related to five facilities, three of which were new construction. These three are the nuclear reactor facility of the National Bureau of Standards at Gaithersburg, Md.; the Bureau of Standards laboratory complex, also at Gaithersburg; and the Federal Records Center at Suitland, Md.

Other contracts involved maintenance or repainting of interior walls. These are the South Building of the Department of Agriculture and the Central Intelligence Agency Headquarters at McLean, Va.

II. FINDINGS AND CONCLUSIONS

To a substantial degree, the allegations of the painters proved to be correct. A few of the allegations they made arose from their lack of knowledge of changes in contract specifications.

Other allegations could not be substantiated for lack of proof. For example, a common allegation was the failure of the contractors to apply the required number of paint coats—a deficiency known in the painting trade as “coat stealing.” Coat stealing saves the painting contractor money, both in materials and labor; limits the amount of work available for the painters; and, most important of all, short-changes the Government. In many instances, the limitation on the proof of painting deficiencies of this variety was due directly to the painting contractors’ failure to follow specific contract specifications directing that subsequent coats of paint be of a sufficiently different tint as to be readily discernible from the preceding coat.

Other allegations failed in proof apparently because the subcommittee carried on its investigation at the same time as the building was being painted. As the president of an independent testing laboratory employed by the General Services Administration to determine the adequacy of the painting work at the Federal Records Center advised GSA:

I do suspect one coat may have been applied at the time these allegations were made. Much of the interior area looked thin at the time of our first visit to the Records Center on February 3, 1967. However, much repainting has been performed since then.

III. RECOMMENDATIONS

A GSA study team, after a comprehensive review of the organizational and procedural aspects of the agency’s construction program, has made 50 recommendations to the Administrator of General Services for improving the entire construction program, of which painting is only a part. Inherent in these recommendations is the strengthening of GSA’s inspection procedures and construction supervision, the improvement of contract specifications, the establishment of clear lines of responsibility for those officials connected with the construction program, and various other program improvements.

The committee believes that vigorous implementation of these recommendations should go far toward eliminating the deficiencies disclosed by our review as well as improving the overall functioning and administration of the construction program. Consequently, any committee recommendations regarding these aspects of the program would be premature until such time as the results of the agency’s efforts can be assessed. However, the committee has recommended that the following additional actions be taken by GSA:

A. That GSA consider hiring directly, on a temporary basis, the union painters necessary to perform maintenance-type painting. This procedure would avoid the middleman profit of the contractor and the misinterpretations of specifications that seem to occur. Further, by scheduling such maintenance work in winter months,

GSA would be able to provide work during the normally slack season for painters (and other craftsmen).

B. That GSA discuss the proposed changes in its procedures with the General Accounting Office and coordinate with the Corps of Engineers and other agencies having major responsibilities for the construction and maintenance of Federal facilities so as to obtain the benefit of their combined experience and advice in this area.

C. That GSA furnish the committee with a progress report on the implementation of changes in contract inspection and specification procedures as of January 1, 1968, so that the committee can determine whether further action is needed in this area.

D. That, contrary to the recommendation of the Administrator's panel, GSA should seek means for greater utilization of architect-engineer (A/E) personnel for inspection purposes. The committee believes that much of the inspection problem confronting GSA can be solved, on a more economical and practical basis, by the use of A/E personnel, since it is doubtful whether GSA could hire the necessary qualified inspectors to meet its ever changing needs. While conditions on which such personnel are employed may present some problems, GSA should resolve these problems rather than abandon the use of A/E inspectors.

IV. DISCUSSION

A. NUCLEAR REACTOR FACILITY

The Nuclear Reactor Facility at the National Bureau of Standards—a structure designed to the most exacting specifications—was painted in an unworkmanlike manner, and, in some instances, in complete disregard for the specification requirements. The deficiencies exhibited on this job include coat stealing, poor preparation of surfaces to be painted, and unauthorized substitutions by the contractor of improper primers and finish coats.

The most glaring example of coat stealing in this facility was in the main reactor room. The painting contractor applied the required number of coats of paint on the 40-foot walls of this room only to the height of 14 feet—just beyond the reach of an uninquisitive inspector testing the coating thickness at ground level.

Even if the contractor had applied the specified number of coats, the job would have been compromised by the fact that the coating was applied without proper surface preparation. Loose, sand-based filler material was apparently applied to cover cracks and voids in certain of the walls. On some wall areas of the reactor room there were pockets or blisters of this sand-like material which, not only detracted from the appearance of the walls, but also could have hindered cleaning the walls should they be exposed to any radioactive material. Also, numerous holes, some as large as one-fourth inch in diameter, had been left in the ceiling area and had simply been painted over without any attempt having been made to fill them.

Moreover, the contractor sprayed the tops of concrete beams as well as the many electrical junction boxes in the main reactor room without first removing construction debris.

Further, some doubt exists whether the contractor properly acid-etched the concrete surfaces of the main reactor room of the facility as expressly required in the contract specifications.

In other parts of the building, the contractor ignored specifications relating to the undercoating of metal ductwork. In lieu of a vinyl wash coat and iron oxide primer, he applied water-base paint—generally considered to be an inferior primer for metalwork of this kind.

During the hearing, Mr. Van Eyken of GSA offered the following testimony as to the effect of water-base primer on galvanized ductwork:

Mr. VAN EYKEN. The use of water base paint on ductwork could be made effective provided a wash primer is applied to this ductwork. Ductwork can be a galvanized surface and a water base paint will not adhere to galvanized surfaces. You have to apply a wash primer, which is a base type of coat.

Mr. BROOKS. Did they put one on it?

Mr. VAN EYKEN. I don't know. I have seen water base paint on the ducts and in some cases the adhesion was quite good. In other cases, the adhesion was less than what would be desirable.

Mr. BROOKS. Everybody understands about painting galvanized tin. If you don't put something on it you are wasting your time painting it. If you do not put a base on it, it is a 50 percent waste of time. It will peel and come off. When we don't follow specs we build up future costs of maintenance * * *.

John Moore, president of Moore Research Laboratories, who inspected the Reactor Facility at the request of GSA, stated in his report regarding the ductwork:

* * * the adhesion of this paint to the galvanized iron is poor. If the metal surface was etched, there is no evidence that adhesion was increased. In fact, while my record does not cover the painting in this area, I would expect a special galvanized iron primer such as TT-P-641 or at least a zinc chromate primer to be specified as the first coat [iron oxide primer was specified but, apparently, was not used]. Furthermore, this paint system is brittle.

The contractor also used water-base paint in lieu of more expensive polyester in coating the cinderblock walls of the so-called "hot lab." Although this apparently will not adversely affect utilization of the lab, the substitution was nevertheless in gross violation of the specifications.

As was brought out in the hearing, the original painting subcontractor, the William Dunbar Co., had been bitterly dissatisfied with the condition of the concrete surfaces in the reactor room. But, his contract was terminated—for reasons that are not too clear. The coating manufacturer Dunbar had contacted to supply the special coating for the main reactor rooms also commented on the condition of the walls, stating in a letter to Dunbar:

* * * as a recent inspection revealed, the concrete surfaces generally are not in a condition where they can satisfactorily receive a smooth, continuous, pinhole free elastomeric coat-

ing. Some areas are "honeycombed," some areas are scratched and gorged, while other areas will definitely require major repairs.

However, as Mr. Huber of GSA testified:

* * * the surface of the concrete was determined in the Government's opinion and based on Mr. Hairston's, acceptable.

Mr. Robert Prichard, the construction engineer on the reactor job forwarded a memo, on March 16, 1966, to the GSA regional office, giving full acceptance of the work. And yet, the most casual inspection—walking hurriedly through the main reactor rooms—disclosed many obvious deficiencies.

B. LABORATORY COMPLEX (PHASE III-B)

Despite the size of the phase III-B laboratory complex of the National Bureau of Standards, relatively little painting work was involved in the project. Although the overall job was visually acceptable, several painting deficiencies were found to exist.

For example, although it was impossible to make a thorough examination of the "ducting" that runs throughout the interior of the building exhausting acid and chemical fumes from each laboratory, the subcommittee obtained reliable evidence casting serious doubt whether the ducts were coated in a workmanlike manner. Sags and runs were evident in the installed ductwork which the subcommittee was able to inspect, and basic tests indicated holidays and voids in the coating near the inspection openings.

Furthermore, it was definitely established that a substantial portion of the ductwork was coated with a material that had not been approved for this use by the GSA or the National Bureau of Standards. The following testimony was received regarding the ductwork:

Mr. BROOKS. Did GSA at any time approve the application of any Vortex manufactured paint for this purpose at the laboratory complex?

Mr. SCHMIDT. I don't believe so.

* * * * *

Mr. BROOKS. The reason I asked is that according to the evidence we have, approximately a thousand gallons of Vortex paint was delivered to the subcontractor's Rockville plant, and applied to the ducting going into the laboratory plant at Gaithersburg. Does your staff have any explanation for this deficiency, or do you?

Mr. HUBER. I have no knowledge of that.

Mr. BROOKS. No knowledge of it?

Mr. HUBER. No, sir.

Mr. BROOKS. Mr. Prichard?

Mr. PRICHARD. I have no knowledge of Vortex itself having been delivered to the plant in Rockville. I had an inspector over there who went over there every day. Of course, he didn't stay there all day because he had other things to do. He never reported to me any material other than the Bructect being used. That doesn't mean that some could not

have been used. I certainly would not say that none was there.

* * * * *

Mr. Brooks. This is indicative of the lack of careful inspection—of following the specifications. In other words, the paint contractors just didn't pay much attention to what you said, and you didn't do anything about it—you see, that is the problem.

Fortunately, the substituted coating was of good quality and of a type usable on work of this kind. Hopefully, luck will favor the Government in that the coating on this ductwork will hold up. The cost and disruption inherent in its replacement would be formidable.

Further deficiencies were found in the attic areas of the seven-building complex where, for example, the roof decking received only one coat of paint in lieu of the four coats required in the specifications.

C. FEDERAL RECORDS CENTER

The Federal Records Center, as in the case of the laboratory complex, represents an acceptable overall appearance. Due primarily to the lack of tinting by the contractor, it was not possible to prove conclusively that the contract specifications had been violated—or, conversely, whether the contractor complied with the specifications. The contractor failed to tint; logically, the burden of proof is on him to prove that the number of coats required under the specifications was actually applied.

There are indications that the contractor did not apply the proper number of coats—at least, up to the time the allegations were made—and the contractor admits skipping the primer coat completely, for which a proper adjustment should be made in contract price. Once a finish coat is applied—and for technical reasons finishing paints should not be substituted for primers—then it is obviously too late to go back and remedy the omission.

Here again, the GSA inspectors were unaware that the required paint was not being used. Mr. Connors, the GSA construction engineer in charge of the records center project, when asked what had happened to the primer coat, testified:

To my knowledge, sir, it was applied.

Mr. Brooks. To your knowledge?

Mr. CONNERS. Through checking the building; we checked labels on containers whenever we checked through the building.

Mr. Brooks. You saw them apply it?

Mr. CONNERS. I saw it on occasion, sir.

Mr. Brooks. On occasion? The reason I am asking this is the contractor's own records indicate that the primer required in the specifications was not applied. The required material, I don't believe, was even delivered to the job, and I think that the contractor admitted this to the GSA compliance personnel. I think that your testimony and theirs is at variance, and I think you ought to check that very carefully.

At the Records Center the committee's investigation also disclosed another weakness in GSA's contract specifications. An example of this is the ambiguously worded painting specifications as they relate to certain internal ductwork at the facility. The specifications are written so that any one of three coating systems could have been applied. This shortcoming was a disadvantage to the Government because it allowed the contractor the option to choose whatever coating system he desired. The Moore Research Laboratory, aware of this deficiency, offered the following comment in its report to the GSA:

Confusion continues because the painting specification allows several interpretations to be made concerning the proper paint that should be applied to various surfaces. No one part of the contract covers all the painting requirements. It is obvious this painting spec is very similar to the guide specifications * * *.

The method of preparing painting specifications causes continued differences between Public Buildings representatives and the paint contractor. The former will likely not complain, but there needs to be a major change here. A new guide specification is a must * * *.

D. SOUTH AGRICULTURE BUILDING

At the South Agriculture Building, the failure of the contractor to tint the first coat limited the proof as to the number of coats of paint applied. However, here again, as at the Nuclear Reactor Facility, the job was done in a hurried manner.

The office walls were primarily "tired Government green" a color long overused in Federal facilities. The ceilings and top 15 inches of the walls were white. A subcommittee staff inspection disclosed that the paint was often unevenly applied and, in numerous offices, the green and white paint joined in a wavy, uncertain line. In many instances, the green paint on the walls near the ceiling is so thin that white paint, which had been applied first, is visible beneath the green.

Mr. Schmidt, as a result of the committee's investigation, inspected a portion of the South Agriculture Building himself. As Mr. Schmidt testified at the hearing:

Well, Mr. Chairman, the areas I looked at, it will take a pretty steady hand to get a real straight line. I would agree with you that we like a professional job, and certainly in many of the areas I saw, it looked more like I might have done the job in my own painting.

The committee's inspection also revealed that the surfaces to be painted were not always prepared in accordance with the specifications. This in many instances, resulted in a rough, unsightly appearance of corridor and office walls. Mr. Schmidt concurred with the committee's findings, testifying that:

There were areas where in my judgment the surface was not properly prepared, and we are picking this up in a final inspection.

Mr. BROOKE. You are picking that up—

Mr. SCHMIDT. There undoubtedly is going to have to be some corrective work.

The paint work at Agriculture was adversely prejudiced by the poor choice of color as well as the age of the building, at least, as compared to the other facilities included in this investigation. This later fact, however—the age and condition of the building—was all the more reason for an exacting paint job that would minimize the adverse effect of some of these deficiencies.

E. CENTRAL INTELLIGENCE AGENCY

As was true for the laboratory complex and the Federal Records Center, the CIA painting job resulted in a generally neat and visually acceptable job. However, laboratory tests indicate that a substantial portion of the painted surfaces in the interior of the building received only one coat of paint rather than the required two coats. Here again, lack of tinting in the first coat prevented positive identification of the number of coats applied in many areas tested.

The GSA advised the committee that a certain amount of one-coat work was done with the knowledge and approval of the GSA inspectors. These exceptions to the specifications were made, generally, in those areas where, for security reasons, the painters were not allowed back in the areas to complete the work. However, the excepted areas represent only about 8 percent of the total area painted and testimony by Mr. Van Eyken of GSA's Federal Supply Service, who had conducted tests on this facility, indicates that a considerably larger area had received only one coat:

Mr. BROOKS. Would you say about 43 percent of the building in your estimate had one coat?

Mr. VAN EYKEN. No, I couldn't say that, although that might be indicative of the number of tests here, and if you check the number of tests versus the numbers of times where we had one coat, well that would come out to 43, but this would not be representative of square footage of surfaces that had been covered, that had been painted.

Considering that up on the 7th floor, for instance, I had very few occasions where one coat of paint had been applied * * *.

* * * * *

Now, as far as one coat versus two coats is concerned, and not considering the areas where they had applied three coats, where three coats were necessary to give it a little better resistance, primarily in areas where there was a lot of traffic like in the basement area, I would say, to venture a technical estimate, I would say that not more than 20 percent of the surface area had been shortchanged.

Mr. Van Eyken also testified that:

The general appearance of the job, I would say, is quite excellent. As far as commercial jobs go, if you compare

this Government job with commercial jobs, I was quite satisfied.”¹

Other evidence clearly shows that there were “trade offs” of whole areas that did not have to be painted in exchange for the contractor doing other work. There was undoubtedly some splitting of coats as Mr. Van Eyken testified. However, the committee does not believe that these exchanges can account for all the “one-coated” walls at CIA.

F. CONCLUSION

The painting deficiencies disclosed by the committee fall into two general categories. First, there are obvious and apparent deficiencies in the actual appearance of the work performed which, in some instances, could adversely affect utilization of the facility, or cause premature deterioration in the paint work. This type of deficiency suggests serious shortcomings in GSA inspection procedures.

The other general category includes those deficiencies which involve failure to perform in accordance with the specifications without adversely affecting the appearance or use of the facility. In other words, whatever paint was applied, in whatever quantity, the end result was a satisfactory appearance. In the case of much interior painting, appearance is the sole objective; however, where less paint is applied than the specifications require, the Government may be suffering substantial monetary loss through the payment for work and materials not received. This type of deficiency reveals the need for improving GSA painting specifications—if one coat will provide an adequate result, why provide—or at least pay—for two?

In numerous discussions with individuals experienced in the painting field, it was clear that painting deficiencies are often the result of inadequate Government specifications and inspection procedures. Further, many painting contractors seem to disregard paint specifications and bid and perform Government contracts under circumstances which logically suggest the intent to apply as little paint as possible.

However, as John Moore, President of Moore Research Laboratories, concluded in a report to GSA:

An honest painting and decorating contractor welcomes strict inspection on his jobs. If there were more skilled inspectors used, the owner would be getting a good job and some dishonest contractors would be “going out of business” or raising their costs to cover an honest job.

GSA officials appeared to be deeply concerned over these deficiencies, considering them symptomatic of even more fundamental problems relating to GSA’s construction program. As a result, the Administrator of General Services, collateral to the committee’s investi-

¹ This raises the question of whether two coats of paint were, in fact, necessary for this type of work. Mr. Van Eyken testified subsequently that:

*** We have found, for instance, that often in many cases we have been using as [Congressman Brooks] said earlier, two or three coats of paint, where possibly one or two coats might do from the value of the engineering point of view—one or two might be completely proper.

In other cases, we have overspecified. In other words, we are paying more money than is actually needed. Where latex is needed, we are not going to apply an epoxy type coating, where the price difference is from 1 to 10 or 1 to 12 ***.

Mr. Brooks. Now, it is apparent, especially from that job at CIA, that the Government on interior work might benefit from a specification that requires but a single coat of high quality paint. Are you considering that possibility?

Mr. Schmidt. Very definitely moving in that direction.

gation, appointed the special committee to review all organizational and procedural aspects of the program.

The special committee submitted a report to the Administrator in February 1967 recommending a series of changes in GSA construction procedures, including some relating specifically to painting. It is believed that many of the deficiencies noted by the committee will be corrected by vigorous implementation of these recommendations and by other corrective actions which the agency is taking.

As Mr. Schmidt, GSA's Public Buildings Service Commissioner, testified:

Certainly we can conclude from the investigations that adequate and more effective supervision and inspections by the Government are needed to insure quality performance and adherence to plans and specifications.

Mr. Schmidt went on to state:

The Public Buildings Service has underway at the present time 252 new construction projects, having a total value of \$1.3 billion. If the lessons that we have learned through the medium of painting deficiencies can effect a cost reduction of only a fraction of a percent, surely it will have been worth the effort.

Painting comprises only a minor percentage of total project cost. However, in a building program of \$1.3 billion, this minor percentage is a formidable sum. Improvements in painting procedures made as a result of this investigation are well worth the serious consideration of Congress.

But, this investigation has had a far more fundamental effect. The GSA Administrator last fall, in evaluating these painting allegations collateral to this investigation, wisely concluded that they were symptomatic of more general deficiencies in the GSA building construction program. The remedial action that has been taken encompasses all aspects of Federal construction. Because of this "in depth" approach, the importance of this investigation extends far beyond the painting of Federal facilities. Assuming effective implementation of the recommendations in this report, the increase in efficiency and the resulting savings in tax funds in GSA building construction could far surpass those relating strictly to improved painting specifications and inspection procedures.

APPENDIX

GSA ACTIONS FOR IMPROVING THEIR CONSTRUCTION PROGRAM

As a result of alleged deficiencies in GSA's new construction program, particularly those involving alleged painting deficiencies at the National Bureau of Standards Reactor Facility, an investigation was made by GSA's Office of Compliance. The Administrator of General Services later appointed a special group to evaluate the investigation report and this group recommended that an in-depth study be made of the organizational and procedural aspects of the GSA construction program. The in-depth study, completed in February 1967, resulted in the following recommendations to the Administrator. The recommendations have been rearranged and/or merged so as to relate more directly to the deficiencies in GSA operations as they are discussed in this report.

STRENGTHEN INSPECTION PROCEDURES AND IMPROVE STAFFING FOR CONSTRUCTION SUPERVISION

1. Employ more field grade inspectors at the GS-7 and GS-9 levels in order to provide for more continuous inspection at the site. This action will prevent the contractors from covering up defective workmanship and materials between intermittent inspections, particularly in areas such as painting, concrete work, masonry work, foundation conditions, etc.

2. Require a procedure whereby a proceed or approval slip is issued before the initial and subsequent coats of paint can be applied so as to insure that the inspector has an opportunity to inspect each coat of paint before the contractor applies the next.

3. Reorganize the Construction Branch in each region to provide for:

- (a) Field engineers located as close to the work as possible;
- (b) Office engineers to function on a staff basis and provide administrative-technical support to assigned projects.

4. Discontinue the current practice of having the Chief of the Design and Construction Division serve as contracting officer so as to allow him more time for program management and field inspection. Instead, establish a full-time contracting officer in the division of each region, responsible to the Chief of Design and Construction. Thus, the latter would retain full responsibility for managing the design and construction program in his region.

5. Adopt the policy that GSA use its own staff, to the maximum extent possible, to supervise new construction projects, and that, thereafter, the following methods of supervision be utilized in the order of priority listed: (a) other Government agencies, (b) GSA corps of engineers supplemented by architect-engineer personnel, and (c) architect-engineer supervision.

12 EVALUATION OF ALLEGATIONS OF TRAINING DEFICIENCIES

This is to insure maximum utilization of the higher quality, lower cost inspections for Government construction projects which Government employees provide. Increases in workload should be absorbed by changes in the method of contract supervision in the order of priority listed.

6. Establish, as a long-range goal, regional staffing on the basis of normal workload. Currently, the regions are not staffed up to a normal or even a minimum workload. Consequently, fluctuations in construction workload are offset by (a) supplementation of GSA personnel with A/E supervisory personnel, and (b) failure to meet the minimum standards of inspection specified in the GSA contract manual.

7. Supplement the permanent staff with WAE (when actually employed) personnel for checking plans and specifications and for inspection purposes at the job site when the workload in these areas is excessive.

8. Approve the on-site staffing guide recommended by the GSA study team and use the guide as a basis for (a) computing the construction supervision costs used in prospectuses, (b) requesting congressional appropriations, (c) computing charges for construction supervision on transfer jobs and in memorandums for understanding, and (d) allocating funds and ceilings to regional offices.

The recommended staffing guide, developed by comparison with Army and Navy standards and on the basis of judgment and experience, is expected to improve both staffing and funding of construction projects.

9. Reduce to a minimum, consistent with a reasonable determination of compliance, the regional manpower expended in checking contractor payrolls so that the manpower so released could be devoted to other purposes. This could be accomplished by (a) using "spot-check" procedures as permitted in the contract administration handbooks, and (b) utilizing the checks made by the construction engineer and his staff where initial examination of a contractor's payrolls indicate compliance on his part.

IMPROVE PROCEDURES FOR THE PREPARATION AND REVISION OF SPECIFICATIONS

10. Establish a definite time cycle for the review and revision of guide and standard specifications.

11. Establish a formal procedure to insure that the responsible divisions in the central office are promptly notified by the regions of inadequacies in specifications.

There are indications that specification deficiencies, although often called to the attention of the central office, do not often reach the director of the division responsible for the specification.

12. Include in the GSA handbook, "Instructions to Contract Architects and Engineers," an adequate and concise explanation of the manner in which the various types of specifications should be used by the architect-engineer in the preparation of project specifications.

13. Emphasize, to a greater extent, qualitative factors when evaluating architect-engineers' ability to meet design objectives, including the production of adequate contract documents.

14. Brief the members of the A/E staff responsible for the actual preparation of the project specification on the proper method of preparing the specification.

15. Emphasize the GSA policy of holding the architect responsible for the adequate preparation and checking of all documents, including those of his consultants.

16. Require the Office of Design to develop a guide to be used to spot-check the architect's drawings and specifications for quality and accuracy.

17. Provide adequate time for the checking and review of final working drawings and specifications.

18. Establish the practice of having prebid conferences on all large new construction jobs so that ambiguities and errors in the drawings and specifications can be corrected.

IMPROVE PRECONSTRUCTION PLANNING

19. A/E contracts for supervision (a) should be divorced from the design contract and negotiated at the regional level at the time of award of the construction contract; (b) should outline more clearly the responsibilities and duties of the A/E and his personnel; and (c) should outline the number and quality of the A/E personnel to be provided and specify the duration of the contract.

These recommendations resulted from the fact that A/E contracts for construction supervision are now negotiated many months, even years, before they are executed by personnel who have no connection with the final execution and have little knowledge of what conditions will be at the start of construction. Further, many complaints were made to GSA about the quality of A/E personnel provided for supervision and inspection.

20. Experience has shown that it is impossible to project in detail the physical layout of a building 5 or 6 years, or even 1 year, in advance of its completion. Also, there is a reluctance on the part of occupant agencies to firm up their requirements. In order to reduce the number of change orders (and the resultant delays and cost increases) resulting from agency changes, the following recommendations are made:

(a) Basic building design criteria for multiple occupancy office buildings should include (1) permanent, special-purpose facilities; (2) a flexible core of specialized areas (increased air conditioning, electrical, and floor loads, etc.); and (3) general purpose office space.

(b) Establish a firm date after which agency changes affecting the permanent features of the building must be done at the expense of the requesting agency.

(c) Combine and prepare partition occupancy and move-in plans as near the date of occupancy of the building as possible.

(d) Prepare partition and occupancy plans on a team basis with representatives from Design and Construction and Space Management Divisions so that the plan can be used both as a contract and as a working drawing.

(e) Execute a separate contract for the installation of demountable partitions, electrical and communications outlets, and minor adjustments to air conditioning and ceiling systems.

21. Project construction schedules should be "tailor-made" for each project, and should take into consideration all factors relating to the time required to perform the work.

22. Require the regions to develop schedules for all new construction projects coming under their jurisdiction and submit the schedules to the central office for approval.

REVISE ORGANIZATIONAL STRUCTURE OF PUBLIC BUILDINGS SERVICE
AND CLARIFY RESPONSIBILITIES FOR CONSTRUCTION SUPERVISION

23. Decentralize to the regions responsibility and authority for certain designated functions of design and construction operations presently assigned to the central office. This will enable the central office to more effectively administer an overall program and establish more realistic levels of responsibility at the regional level.

24. Abolish the Office of Design and the Office of Construction and establish a new Office of Design and Construction so as to minimize excessive coordination problems between these two interrelated programs.

25. Document and distribute to affected employees all informal organizational arrangements in regional design and construction division so as to clarify employees' responsibilities and supervisory relationships.

26. Develop a single document clearly outlining the responsibilities for the representative assigned to each project, to be tailor made for each project. Responsibilities and authorities should vary depending on the size and complexity of the project and on the qualification of the GSA representative assigned.

27. Revise the General Provisions and General Conditions of the Contract and the Construction Administration Handbook to eliminate present conflicts and specify the responsibilities and authorities of the representative consistent with the document recommended above.

28. Delegate authority to approve change orders to \$1,000 to the contracting officer representative (CE). This delegation will expedite handling of a substantial amount of the changes and eliminate an equal amount of paperwork, at the regional office level.

29. Establish centralized responsibility for developing and coordinating an overall system for the scheduling and control of new construction projects.

30. Initiate immediately a study to develop a reporting system consistent with the decentralization of responsibility for design and construction operations to the regions.

PLACE GREATER EMPHASIS ON CAREER DEVELOPMENT AND TRAINING

31. Require the Chief of Design and Construction in each region to establish and maintain a career and professional development program which will systematically upgrade the competence and qualifications of the professional and technical staff.

32. Actively encourage Design and Construction personnel to participate in activities, conventions, and seminars of professional and technical societies.

33. Recruit more technical and professional staff at the GS-7 and GS-9 levels for the purpose of developing career ladders which will eventually make it possible to fill the higher jobs from within.

34. Conduct a study to determine the necessary realignment of grade structure in the Design and Construction Divisions of the

regions on the basis of the increased responsibilities resulting from decentralization and delegation.

REVISE AND PREPARE CONSTRUCTION HANDBOOKS

35. Review and revise all handbooks, as expeditiously as possible, to reflect GSA's latest thinking and criteria. All revisions are to include a distinction between policies applicable to new construction projects and repair and improvement projects.

36. Prepare a handbook for the use of those individuals responsible for field management, supervision, and inspection of construction.

IMPROVE FUNDING PROCEDURES

37. Allot to the regions, prior to award of design contracts, sufficient S. & E. (sites and expenses) funds to cover the contract plus a reasonable amount for design and contingencies and contract administration so as to be consistent with the recommendation to assign design review responsibility to the regions.

38. Allot to the regions, at the time the construction contract is awarded, sufficient S. & E. funds to cover contract supervision plus a reasonable amount for supervision contingencies.

39. Revise, based on past experience, the table currently being followed by the central office to determine the amount of construction contingency funds to be allotted to regions for each project.

40. Develop a procedure providing for the central office to make the allotment to regions for construction contracts upon receipt of notification of contract award amount. Presently, the entire bid package must be submitted to the central office for approval.

Apart from the in-depth study of the construction program organization and procedures, GSA has initiated other improvement action:

1. GSA's guide specification for painting and coatings is undergoing intensive updating. Generally, on new work, the agency is now requiring only a prime coat and one finish coat. In maintenance painting, they are requiring only one coat unless two are obviously needed.

2. GSA has contracted with Moore Research Laboratories to design and conduct a school for journeymen painters to convert such employees into painting inspectors.

3. In cooperation with the Federal Supply Service, GSA is preparing a different training course, designed to give professional employees more specialized training needed for specification writing and project review.

